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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/898,823	07/03/2001	Chris Eberspacher		1107

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EXAMINER

TSOY, ELENA

ART UNIT	PAPER NUMBER
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1762

6

DATE MAILED: 03/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/898,823

Applicant(s)

EBERSPACHER ET AL.

Examiner

Elena Tsoy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

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Election/Restrictions

1. Applicant's election of Claims 1-8 in Paper No. 5 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Claims 9-24 have been cancelled as directed to a non-elected invention. Claims 1-8 are pending in the application.

Specification

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: a solution comprising two or more dissolved metals of claim 1 is not in the body of the disclosure. Amendment of the disclosure to incorporate the language of originally filed claims does not raise issue of new matter.

Claim Objections

3. Claim 1 is objected to because of the following informalities: "at least one each metal" in lines 5, 7 is suggested to be changed to "at least one metal" for clearer understanding.

4. The Examiner Note: Claim 1, lines 2-3, 4, 6, for examining purposes "two or more" in a phrase "a solution comprising two or more dissolved metals and/or metal-containing compounds" was interpreted as relating to "dissolved metals" not to "metal-containing compounds".

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. **Claims 1, 2** are rejected under 35 U.S.C. 102(e) as being anticipated by Brezny (US 5,919,727).

Brenzny discloses a method for making a composite powder (mixed-metal particles), comprising: preparing a solution comprising metal-containing compounds comprising at least one metal selected from Groups IIIB and IVB such as cerium salt and zirconium salt; forming droplets of the solution; and heating the droplets to pyrolyze the contents of the droplets to form cerium oxide and zirconium oxide mixed at the *atomic* level (single phase metal oxide) (See column 2, lines 24-52).

7. **Claims 1, 3, 4, 6** are rejected under 35 U.S.C. 102(b) as being anticipated by Berndt et al (US 4,624,941).

As to claims 1, 3, 4, Berndt et al disclose a method for making a composite powder (mixed-metal particles), comprising: preparing a solution comprising metal-containing compounds comprising at least one metal selected from Groups IB and IIIB including noble metal salts such as gold and silver salts and salts of rare earth elements such as cerium salt, lanthanum salt (See column 2, lines 15-18, 50-57); forming droplets of the solution; and heating

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the droplets to pyrolyze the contents of the droplets to form the composite powder which in addition to the noble metal (non-oxide phase) contains oxides of rare earth elements (multiple metal oxide phases) (See column 2, lines 61-68).

As to claim 6, it is the Examiner's position that the metallic phase is enveloped with metal oxide phase because Berndt et al teach that the metallic and oxide constituents are contained in the powder particles in a virtually homogeneous distribution (See column 2, lines 66-68; column 3, lines 1-2); wherein the weight ratio of at least one noble metal to at least one rare earth element oxide in the powder particles is in the range from 1:50 to 5:10, preferably 1:10 (See column 3, lines 58-63).

8. **Claims 1, 3-5** are rejected under 35 U.S.C. 102(b) as being anticipated by Douglas et al (US 4,023, 961).

Douglas et al disclose a method for making a composite powder (mixed-metal particles), comprising: preparing a solution selected from the group consisting of a solution comprising (i) metal-containing compounds comprising at least one metal from Group IB including noble metal salts such as gold and silver salts (See column 2, lines 19-23), a solution comprising (ii) metal-containing compounds comprising at least one metal from Group IIIB such as cerium salt, lanthanum salt (See column 2, lines 23-27) and a solution comprising combination of (i) and (ii) (See column 2, lines 27-31); forming droplets of the solution; and heating the droplets to pyrolyze the contents of the droplets (See column 2, lines 11-18) to form metal/metal (multinary metallic particles) (See column 2, lines 28-30), a metal (non-oxide phase)/metal oxide or metal oxide/metal oxide (multiple metal oxide phases) composite in powder form (See column 2, lines 9-10, 19-31).

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9. **Claims 1, 8** are rejected under 35 U.S.C. 102(b) as being anticipated by Cumberbatch (EP 297799).

Cumberbatch discloses a method for making a mixed-metal particles, comprising: preparing a solution comprising Cu salt and salts of gallium (Ga) and indium (In) (See column 1, lines 23-26; column 2, lines 5-18, 34-38); forming droplets of the solution (See column 3, lines 47-49), and heating the droplets to pyrolyze the contents of the droplets to form multinary metal particles (See column 1, line 26; column 3, lines 27-53).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. **Claim 7** is rejected under 35 U.S.C. 103(a) as being unpatentable over Cumberbatch (EP 297799) in view of Wiesmann (US 4,536,607).

Cumberbatch, as applied above, further teaches that mixed-metal particles of CuInSe_2 produced by spray pyrolysis of droplets of Cu and In containing solution may be used for depositing a thin film on a substrate to form a photovoltaic junction in solar cells (See column 3, lines 44-56). However, Cumberbatch fails to teach that the mixed-metal particles have an average diameter of less than 1 micron.

Wiesmann teaches that particles of CuInSe_2 produced by any methods known in the art, such as spray pyrolysis, vacuum evaporation from multiple crucibles, or sputtering may be used for forming a thin film of about 1/2 micron thick in photovoltaic cell (See column 8, lines 42-

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48). In other words, CuInSe_2 particles produced by any known methods including spray pyrolysis may form particles of about 1/2 micron or smaller.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used spray pyrolysis of Cumberbatch to produce particles of CuInSe_2 having an average diameter of about 1/2 micron or smaller depending on intended use of a final product since Wiesmann teaches that particles of CuInSe_2 produced by any known methods including spray pyrolysis may be used for forming a thin film of about 1/2 micron thick in photovoltaic cell.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elena Tsoy whose telephone number is (703) 605-1171. The examiner can normally be reached on 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on (703) 308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Elena Tsoy

Elena Tsoy
Examiner
Art Unit 1762

March 24, 2003